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10/051,991	01/16/2002	Mark A. Carlson	P5764	9173

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EXAMINER	
MEUCCI, MICHAEL D	
ART UNIT	**PAPER NUMBER**
2142	

DATE MAILED: 10/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/051,991	CARLSON ET AL.	
	Examiner	Art Unit	
	Michael D. Meucci	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This application has been reassigned to Michael Meucci.

Drawings

2. The drawings were received on 27 June 2005. These drawings are acceptable and objection to the drawings has been withdrawn.

Response to Amendment

3. Examiner acknowledges amendments made to the specification incorporating reference numbers previously not mentioned. These objections have been withdrawn.

4. Examiner acknowledges amendments made to overcome objections to the claims. These objections have been withdrawn.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 4, 7, 16, 18, 20, 25, 27, 32, 33, 35, 38, and 47 are rejected under 35 U.S.C. 102(e) as being anticipated by Fuller (2003/0055972).

a. With respect to claim 1, Fuller discloses a method for managing multiple resources in a system including at least one host (par. 30, lines 1-4), network (par. 28, lines 4-12), and a storage space comprised of at least one storage system that each host is capable of accessing over the network (par. 27, line 5), comprising:

measuring and monitoring a plurality of service level parameters indicating a state of the resources in the system (par. 36, lines 7-10);

determining values for the service level parameters (par. 37, lines 5-7);

determining whether the service level parameter values satisfy predetermined service level thresholds (par. 37, lines 7-11);

indicating whether the service level parameter values satisfy the predetermined service thresholds (par. 37, lines 13-22); and

determining a modification of one at least one resource deployment or configuration if the value for the service level parameter for the resource does not satisfy the predetermined service level thresholds (par. 36, lines 18-23).

b. With respect to claim 2, Fuller discloses that the monitored service level parameter comprises one of a performance parameter and an availability level of at least one system resource (par. 34, lines 1-2).

c. With respect to claim 4, Fuller discloses that the modification of resource deployment comprises at least one of adding additional instances of the resource and modifying a configuration of the resource (par. 61, lines 9-14).

d. With respect to claim 7, Fuller discloses writing to a log information indicating whether the service level parameter values satisfy the predetermined service thresholds (par. 37, line 13).

e. With respect to claim 16, Fuller discloses invoking an operation to implement the determined additional resource allocation (par. 36, lines 21-23).

f. With respect to claim 18, Fuller discloses a system for managing multiple resources in a system including at least one host (par. 30, lines 1-4), network (par. 28, lines 4-12), and a storage space comprised of at least one storage system that each host is capable of accessing over the network (par. 27, line 5), comprising:

means for measuring and monitoring a plurality of service level parameters indicating a state of the resources in the system (par. 36, lines 7-10);

means for determining values for the service level parameters (par. 37, lines 5-7);

means for determining whether the service level parameter values satisfy predetermined service level thresholds (par. 37, lines 7-11);

means for indicating whether the service level parameter values satisfy the predetermined service thresholds (par. 37, lines 13-22); and

means for determining a modification of at least one resource deployment or configuration if the value for the service level parameter for the resource does not satisfy the predetermined service level thresholds (par. 36, lines 18-23).

g. With respect to claim 20, Fuller discloses that the modification of resource deployment comprises at least one of adding additional instances of the resource and modifying a configuration of the resource (par. 61, lines 9-14).

h. With respect to claim 25, Fuller discloses a system for managing multiple resources in a system including at least one host (par. 30, lines 1-4), network (par. 28, lines 4-12), and a storage space comprised of at least one storage system that each host is capable of accessing over the network (par. 27, line 5), comprising:

a processing unit (par. 27, line 20);

a computer readable medium accessible to the processing unit (par. 27, line 21);

program code embedded in the computer readable medium executed by the processing unit to perform:

(i) measuring and monitoring a plurality of service level parameters indicating a state of the resources in the system (par. 36, lines 7-10);

(ii) determining values for the service level parameters (par. 37, lines 5-7);

(iii) determining whether the service level parameter values satisfy predetermined service level thresholds (par. 37, lines 7-11);

(iv) indicating whether the service level parameter values satisfy the predetermined service thresholds (par. 37, lines 13-22); and

(v) determining a modification of at least one resource deployment or configuration if the value for the service level parameter for the resource does not satisfy the predetermined service level thresholds (par. 36, lines 18-23).

i. With respect to claim 27, Fuller discloses that the program code for

determining the modification of the resource deployment comprises at least one of adding additional instances of the resource and modifying a configuration of the resource (par. 61, lines 9-14).

j. With respect to claim 32, Fuller discloses an article of manufacture including code for managing multiple resources in a system including at least one host (par. 30, lines 1-4), network (par. 28, lines 4-12), and a storage space comprised of at least one storage system that each host is capable of accessing over the network (par. 27, line 5), wherein the code is capable of causing operations comprising:

measuring and monitoring a plurality of service level parameters indicating a state of the resources in the system (par. 36, lines 7-10);

determining values for the service level parameters (par. 37, lines 5-7);

determining whether the service level parameter values satisfy predetermined service level thresholds (par. 37, lines 7-11);

indicating whether the service level parameter values satisfy the predetermined service thresholds (par. 37, lines 13-22); and

determining a modification of one at least one resource deployment or configuration if the value for the service level parameter for the resource does not satisfy the predetermined service level thresholds (par. 36, lines 18-23).

k. With respect to claim 33, Fuller discloses that the monitored service level parameter comprises one of a performance parameter and an availability level of at least one system resource (par. 34, lines 1-2).

l. With respect to claim 35, Fuller discloses that modification of resource deployment comprises at least one of adding additional instances of the resource and modifying a configuration of the resource (par. 61, lines 9-14).

m. With respect to claim 38, Fuller discloses writing to a log information indicating whether the service level parameter values satisfy the predetermined service thresholds (par. 37, line 13).

n. With respect to claim 47, Fuller disclose invoking an operation to implement the determined additional resource allocation (par. 36, lines 21-23).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 3, 19, 26, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller (2003/0055972) in view of Mabuchi (2002/0069377), Kamada (6,381,637), and Ellis (5,504,858).

Fuller does not expressly disclose that the service level performance parameters that are monitored are members of a set of performance parameters comprising: a downtime during which the at least one application is unable to access the storage

space; a number of times the at least one application host was unable to access the storage space; a throughput in terms of bytes per second transferred between the at least one host and the storage; and an I/O transaction rate.

Mabuchi teaches that it is known to monitor the amount of time that a storage device is defective (par. 14, lines 5-6). Kamada teaches that it is known to monitor the number of times a storage space is not able to be accessed (col. 15, lines 61-62). Ellis teaches that it is known to monitor request rate and data rate (col. 1, lines 37-40).

Fuller, Mabuchi, Kamada, and Ellis are all analogous art because they are all from the same field of endeavor of networking systems.

At the time of invention, it would have been obvious to use downtime during which the at least one application is unable to access the storage space, the number of times the at least one application host was unable to access the storage space, throughput in terms of bytes per second transferred between the at least one host and the storage, and I/O transaction rate as SLA attributes in Fuller's invention because they are elements of system performance (Fuller par. 36, lines 13-14).

Therefore it would have been obvious to combine Fuller with Mabuchi, Kamada, and Ellis for the benefit of monitoring system performance to obtain the inventions as specified in claims 3, 19, 26, and 34.

9. Claims 5, 6, 21, 28, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller in view of Ellis.

a. With respect to claims 5, 21, 28, and 36, Fuller discloses generating a message indicating that the service level parameters do not satisfy the service level attributes (par. 37, lines 17-22).

Fuller does not expressly disclose that a time period is associated with one of the monitored service parameters and determining a time during which the value of the service level parameter associated with the time period does not satisfy the predetermined service level threshold.

Ellis teaches that it is known to monitor the data rate in a read/write operation and that data rate is the amount of user data that can be transferred per second by the I/O subsystem (col. 1, lines 38-40).

Fuller and Ellis are both analogous art because they are both from the same field of endeavor of storage systems.

At the time of invention it would have been obvious to use Ellis' data rate as one of Fuller's service level attributes because data rate is an element of system performance (Fuller par. 36, lines 13-14).

Therefore it would have been obvious to combine Fuller with Ellis for the benefit of monitoring system performance to obtain the inventions as specified in claims 5, 21, 28, and 36.

b. With respect to claims 6 and 37, Fuller further discloses that a customer contracts with a service provider to provide the system at agreed upon service level parameters (par. 36, lines 10-13), further comprising:

transmitting a service message to the service provider after determining that the value of the service level parameter does not satisfy the predetermined service level (par. 37, lines 11-13); and

transmitting the message indicating failure of the value of the service level parameter for the time period to both the customer (par. 37, lines 17-22) and the service provider (par. 37, lines 11-13).

10. Claims 8, 10, 12, 17, 22, 23, 29, 30, 39, 41, 43, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller in view of Golasky (2003/0074599).

a. With respect to claims 8, 22, 29, and 39, Fuller discloses analyzing operating characteristics to determine whether specified thresholds are met (par. 37, lines 7-11), however Fuller does not expressly disclose determining the resource that contributes to the failure of satisfying the threshold, determining whether any additional instances of the determined at least one resource that contributes to the failure of the service level parameter is available; and allocating at least one additional instance of the determined at least one resource to the system.

Golasky teaches to determine that a resource has failed (par. 25, lines 1-3) and that it is possible to locate a replacement resource (par. 25, lines 3-4) and to utilize that resource (par. 25, lines 4-5).

Fuller and Golasky are analogous art because they are both from the same field of endeavor of data storage systems.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Fuller to allow it to determine that a resource failure has caused the failure of a SLA requirement and to locate an additional resource and replace the failed resource with the located resource. The motivation for doing so would have been to enable Fuller's invention to be able to meet the customer SLA requirements in the event of a failure (Fuller par. 36, lines 20-21).

Therefore it would have been obvious to combine Fuller with Golasky for the benefit of meeting SLA requirements in the event of a failure to obtain the inventions as specified in claims 8, 22, 29, and 39.

b. With respect to claims 10, 23, 30, and 41, Fuller further discloses:

means for determining characteristics of access to the resources by applications operating at the service level; and

means for indicating that the service level is not sufficient due to a change in the access characteristics (par. 37, lines 17-22).

c. With respect to claims 12 and 43, Fuller further discloses that the predetermined access characteristics are specified in a service level agreement that indicates the thresholds for the service level parameter values (par. 36, lines 10-15).

d. With respect to claims 17 and 48, Fuller discloses that customers can specify that they want data storage redundancy through a backup system (par. 47, line 3 – par. 48, line 2). Fuller also teaches indicating whether the component failure causes the resource deployment to fall below the predetermined redundancy threshold (par. 37, lines 17-22).

Fuller does not expressly disclose detecting a failure of one component and determining whether the component failure causes the resource deployment to fall below the predetermined redundancy of resources.

Golasky teaches to determine that a resource has failed (par. 25, lines 1-3).

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Fuller to allow it to determine that a backup resource has failed so that the customer can be notified that the backup cannot occur. If Fuller's backup resource can be monitored for failure and a failure is detected, as taught by Golasky, it is obvious that Fuller's customer's request for redundancy cannot be fulfilled as specified.

Therefore it would have been obvious to one of ordinary skill in the art to combine Fuller and Golasky for the benefit of indicating that a backup cannot occur to obtain the inventions as specified in claims 17 and 48.

11. Claims 9 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller in view of Golasky as applied to claims 8 and 39 above, and further in view of Ellis.

Fuller and Golasky do not expressly disclose that analyzing the resource deployment comprises performing a bottleneck analysis.

Ellis teaches that accessing a storage device can cause a bottleneck (col. 1, lines 59-61).

Fuller, Golasky, and Ellis are analogous art because they are all from the same field of endeavor of storage systems.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Fuller and Golasky to include a bottleneck analysis in the process of determining a failure. The motivation for doing so would have been to find disk failures that are the result of bottleneck conditions.

Therefore it would have been obvious to combine Ellis with Fuller and Golasky for the benefit of identifying bottleneck conditions to obtain the inventions as specified in claims 9 and 40.

12. Claims 11 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller in view of Golasky as applied to claims 10 and 41 above, and further in view of Ellis, Napolitano (6,301,605), and Yamamoto (5,956,750).

Fuller and Golasky do not expressly disclose that the access characteristics include read/write ratio, input/output (I/O) size, and percentage of access being either sequential or random.

Ellis discloses that it is known that read/write ratio can be measured (col. 1, lines 40-41). Napolitano discloses that file size can be monitored in I/O transactions (col. 11, lines 58-59). Yamamoto discloses that the ratio between sequential accesses and random accesses to a disk device can be measured (col. 5, lines 58-61).

Fuller, Golasky, Ellis, Napolitano, and Yamamoto are all analogous art because they are all from the same field of endeavor of storage systems.

At the time of invention, it would have been obvious to use read/write ratio, input/output size, and percentage of access being either sequential or random as SLA

attributes in Fuller's invention because they are elements of system performance (Fuller par. 36, lines 13-14).

Therefore it would have been obvious to combine Fuller and Golasky with Ellis, Napolitano, and Yamamoto for the benefit of monitoring system performance to obtain the inventions as specified in claims 11 and 42.

13. Claims 13, 24, 31, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller in view of Toyouchi (6,006,251).

Fuller does not expressly disclose that requests from applications using a higher priority service receive higher priority than requests from applications operating at a lower priority service, and that determining the modification of the at least one resource deployment further comprises increasing the priority associated with the service level whose service level parameter values fail to satisfy the predetermined service level thresholds.

Toyouchi teaches that requests can be divided into priority groups wherein one group receives higher priority than another. Toyouchi also teaches that requests can change priority due to a relationship with a parameter (col. 11, lines 25-45).

Fuller and Toyouchi are analogous art because they are both from the same field of endeavor of networked systems.

At the time of invention it would have been obvious to allow Fuller's invention to accommodate storage accesses of different priority levels and that the storage accesses could change priority levels if a level of system performance specified in the

SLA was not being reached. The motivation for doing so would have been to ensure that the SLA requirements are met.

Therefore it would have been obvious to combine Fuller with Toyouchi for the benefit of meeting SLA requirements to obtain the invention as specified in claims 13, 24, 31, and 44.

14. Claims 14 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller in view of Toyouchi as applied to claims 13 and 44 above, and further in view of Golasky.

Fuller discloses analyzing operating characteristics to determine whether specified thresholds are met (par. 37, lines 7-11), however Fuller and Toyouchi do not expressly disclose analyzing the resource deployment to determine at least one resource that contributes to the failure of the service level parameter values to satisfy the thresholds; determining whether any additional instances of the determined at least one resource that contributes to the failure of the service level parameter is available; and allocating at least one additional instance of the determined at least one resource to the system.

Golasky teaches to determine that a resource has failed (par. 25, lines 1-3) and that it is possible to locate a replacement resource (par. 25, lines 3-4) and to utilize that resource (par. 25, lines 4-5).

Fuller, Toyouchi and Golasky are analogous art because they are all from the same field of endeavor of networking systems.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Fuller to allow it to determine that a resource failure has caused the failure of a SLA requirement and to locate an additional resource and replace the failed resource with the located resource. The motivation for doing so would have been to enable Fuller's invention to be able to meet the customer SLA requirements in the event of a failure (Fuller par. 36, lines 20-21).

Therefore it would have been obvious to combine Fuller and Toyouchi with Golasky for the benefit of meeting SLA requirements in the event of a failure to obtain the inventions as specified in claims 14 and 45.

15. Claims 15 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller in view of Yoshimoto (2001/0044907).

Fuller discloses determining at least one of host adaptor, network, and storage resources to add to the configuration (par. 61, line 13).

Fuller does not expressly disclose that one service level parameter value indicates a time throughput of input/output operations between the at least one host and the storage space has been below a throughput threshold.

Yoshimoto teaches to monitor input/output operations of a disk device to determine a time during which the throughput is at a threshold of zero (par. 6, lines 9-11).

Fuller and Yoshimoto are analogous art because they are both from the same field of endeavor of storage systems.

At the time of invention it would have been obvious to one of ordinary skill in the art to allow Fuller's invention to monitor the time that the throughput in or out of a storage device is at a threshold of zero, as taught by Yoshimoto, in order to enable Fuller's invention to power down a storage device in order to save energy when it is not in use for a period of time (par. 4, lines 12-17).

Therefore it would have been obvious to combine Fuller with Yoshimoto for the benefit of energy savings to obtain the inventions as specified in claims 15 and 46.

Response to Arguments

16. Applicant's arguments filed 27 June 2005 have been fully considered but they are not persuasive.

17. (A) On page 20-22, applicant contends that Fuller does not disclose "modifying the network when the terms of the SLA are not being met," (second full paragraph on page 21 of remarks). The examiner respectfully disagrees.

As to point (A), the applicant argues that Fuller teaches "notifying an administrator when the terms of the SLA are not being met, for example by illumination of a warning icon." The examiner points to paragraph [0061] on page 6 of Fuller which discloses: "The customer may make a request to alter its account attributes or SLA by, for example, entering information into fields of a web page or GUI. For example, the customer may know that future demands may require more storage space and the customer may wish to purchase more storage. Alternatively, the customer may see from the usage data or otherwise determine that utilization is low and customer may opt to

reduce the amount of storage space assigned to it. Alternatively, customer may have chosen a SLA that specifies that the amount of storage space assigned to any customer should automatically increase or decrease based on need, as determined automatically by the system. In this case, a request to increase or decrease storage space may be generated automatically by the system." The limitation at hand is taught in the step of: automatically increasing storage space assigned to a customer based on need. If the user runs out of storage space, while storing a file for example, it is not meeting the terms of the SLA, so the system automatically increases storage space for a customer. As such, Fuller discloses the claim limitation.

Additionally to point (A): In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., modifying the network when the terms of the SLA are not being met) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

18. (B) Regarding claim 8 and similarly grouped claims, the applicant contends that Golasky does not teach "determining if an alternate resource is available when a resource that caused the failure to meet contracted service level is identified," (second full paragraph on page 24 of remarks). The examiner respectfully disagrees.

As to point (B), the applicant argues that Golasky does not disclose this step since Golasky is a backup system and a backup copy is always available. The

examiner points to paragraph [0025] in Golasky which in-part discloses: "During normal operation of system 10, the agent in SAN appliance 12 monitors network 26. If the agent detects a failure at storage device 14 in logical unit 16, the agent locates a spare logical unit and configures the spare logical unit for use by host 20. In one embodiment, the agent may determine that logical unit 18 has not been assigned to any host and may be used as the spare logical unit. The agent maps logical unit 18 to server 22 and/or directly access storage device 24 to obtain the backup data associated with logical unit 16 and transfers the backup data from storage device 24 to logical unit 18. Once the transfer of data is complete, the agent maps logical unit 18 to the address associated with host 20. Host 20 may then access logical unit 18. In an alternative embodiment, host 20 may be executing an operating system that requires host 20 to reboot in order to access logical unit 18. For these operating systems, SAN appliance 12 configures the agent to remotely initiate a reboot of host 20. Once host 20 completes the reboot procedure, host 20 continues normal operation by storing and accessing data on logical unit 18. Logical unit 16 subsequently may be restored or repaired and the agent and/or SAN appliance 12 may recognize logical unit 16 as a spare logical unit." The step of locating a spare logical unit for use by the host clearly describes the limitation of determining whether any additional instances of the resources are available. If a spare logical unit is found, it is determined if the resource is available.

19. (C) Regarding claims 9 and 40, the applicant contends that Ellis does not teach bottleneck analysis (second full paragraph on page 25 of remarks). The examiner respectfully disagrees.

As to point (C), the applicant argues that although Ellis may mention that a bottleneck could be caused by disk access operations, it does not disclose analyzing the resource deployment by using a bottleneck analysis. Lines 58-64 of column 1 in Ellis describe use of RAID, spreading of data, and load balancing, all of which can be considered bottleneck analysis, not only for the fact that they are implemented to avoid bottlenecks, but also because RAID, spreading of data, and load balancing can all be used as bottleneck recovery and/or redirection methods. As such, these concepts are shown in Ellis and additionally, are very well known in the art.

Conclusion

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lumelsky et al. (U.S. 6,463,454 B1) discloses integrated load balancing, distribution and resource management on a network.

Natarajan et al. (U.S. 6,505,244 B1) discloses a policy engine which supports application specific plug-ins for enforcing policies in a feedback-based, adaptive data network.

Aki et al. (U.S. 2002/0083169 A1) discloses a network monitoring system and automatic reconfiguration of the network to meet service levels required by the network.

Dev et al. (U.S. 2002/0143920 A1) discloses a service monitoring and reporting system using service level thresholds.

Jackson et al. (U.S. 2002/0152305 A1) discloses resource utilization analysis in information management environments and measuring SLA policy effectiveness.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Meucci at (571) 272-3892. The examiner can normally be reached on Monday-Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell, can be reached at (571) 272-3868.. The fax phone number for this Group is 571-273-8300.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [michael.meucci@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Beatriz Prieto

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